

# Habits of a Happy Brain

## Retrain Your Brain to Boost Your Serotonin, Dopamine, Oxytocin, & Endorphin Levels

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### Chapter 1: Your Inner Mammal

- We inherited a brain focused on **survival**.
- Four “happy” chemicals turn on when something is good for our survival:
  - **Dopamine: seek rewards**
  - **Endorphin: ignore physical pain**
  - **Oxytocin: build social alliances**
  - **Serotonin: get respect from others**
- The cortex and limbic system work together to keep you alive.
- Repetition of experiences happy or unhappy builds up your **neuronal pathway**.
- As **your brain seeks good feelings** as a guide for survival, we may decide to eat a doughnut (feeling good) to reduce **stress** (bad feeling) induced by cortisol.
- Even if cortisol makes you feel bad, it is necessary for survival.
- Alcohol, food, drugs, sex, and money can stimulate happy feelings when you feel bad.
- Love and reproduction are encouraged by our **happy hormones** (dopamine by the “chased”, oxytocin by touch and trust, serotonin by the status, endorphin by the pain of laughing and crying, cortisol by the loss of a loved one).

### Chapter 2: Meet Your Happy Chemicals

#### Dopamine

- We get dopamine when we reach a goal or when something triggers our excitement.
- The **neuronal pathway** is built according to our personal experience.
- When we are used to an **expectation**, we don’t have the **dopamine rush** anymore.
- The level of dopamine depends on the potential of the **reward**.
- Dopamine stimulates us to search for more dopamine.

#### Endorphin

- Endorphin **masks pain** for a short time for us to **escape danger** when we are injured.
- Pain signals that our body is suffering.
- Endorphin doesn’t mask social pain.
- Adrenaline is not the same as endorphin, **adrenaline provides energy** to handle an emergency.

#### Oxytocin

- Oxytocin provides the **pleasure of belonging and safety**.
- Mammals have oxytocin when they feel safe in numbers.
- Birth generates a huge boost of oxytocin between the newborn and the mother.
- **Touch** triggers also oxytocin.
- **Herd behavior** makes us trust the judgment of others.
- Reptiles don’t have oxytocin, a lizard doesn’t trust another lizard.

- Small brain animals are born with the necessary knowledge to survive in a specific environment but die fast when they are out of this environment.
- Big brain animals **need more time to mature** but their brain can learn from the environment.
- With oxytocin, a mother will invest more time to protect the newborn.

### Serotonin

- Serotonin makes **social dominance** feels good.
- We shift fluidly between the dominant and subordinate positions during the day.
- When in a position of dominance, you have secure access to food, shelter, and mating opportunities.
- In a group, **the strongest has priority** over the weakest.
- Social dominance is different from socioeconomic status. Serotonin level depends on the neuronal pathway you have built. You can be wealthy and still feel unsafe.

## Chapter 3: Why Your Brain Creates Unhappiness

- Reptiles, fish, amphibians, and even worms have cortisol.
- Cortisol creates pain, fear, stress, and anxiety.
- It enables you to **detect pain and threat before it happens** without the need for rational thinking.
- Our ancestors were facing death problems, the problem we face in our modern world is less extreme but we still have the **same mechanism** wired in our brains.
- We learn what to **fear** from our own experiences.
- Social group triggers good and bad feelings.
- Primates have mirror neurons, we wire ourselves when watching someone get a reward or face a threat.
- **Mirror neurons** allow us to feel other people's pain.
- In a social group, we build a **shared sense of threat**.
- When a baby has needs, cortisol will make him **feel bad**, he will cry to get attention.
- When you feel your status is lower than someone else, you get some cortisol.
- Our cortex seeks evidence of threats to feel safe.
- **Your cortex promotes survival** by looking for logical explanations of what your mammal brain feels is true.
- A lizard doesn't have expectations but a human with **a cortex predicts future pain and rewards**. When it doesn't match, we get some cortisol.
- A brain can construct an image of a bad world despite abundant evidence of good.

## Chapter 4: The Vicious Cycle of Happiness

### Dopamine disappointment

- Dopamine is triggered by new rewards.
- **The brain habituates to good things**, you don't get the rush of excitement of the first time anymore.
- Dopamine motivates us to find the next "first high" by doing something good for our survival.
- The **act of seeking** your reward provides more dopamine than the actual reward.

### Endorphin disappointment

- **Endorphin masks the pain**, you get euphoric when you have a rush of endorphin.
- You need more and more pain to trigger the rush of endorphin.
- When our ancestors were starving, they got a rush of endorphin to **encourage them to forage** for food which is good for survival.
- Synthetic endorphin undermines our natural happy-chemical mechanism and we need more to get the same effect.
- Social pain doesn't trigger endorphin but **endorphin can mask social pain**.

### Oxytocin disappointment

- Oxytocin is triggered by **physical touch and bonding**.

- Oxytocin teaches us to stay in a group for **survival**.
- We stay together despite internal aggression because we fear external aggression even more.
- Alcoholics bond together because of oxytocin, but when someone wants to fight this bad habit, the “friends” will undermine his effort.
- We dream to **join a group to feel safe** but as we are mammals, there are internal conflicts because of cortisol, then we start to look for another group to fit in.

### Serotonin disappointment

- Serotonin surges when we **get respect**.
- Some people impose their wishes on others to get some respect.
- In love, we want the attention of a **higher-status person**.

### Happy habits help you deal with disappointment

- Each time you feel bad, you will naturally fall back to an old habit that makes you feel good.
- **Breaking an old habit is difficult** because losing the happy habit makes the person threatened.
- The best way to break this vicious circle is to do nothing when you feel threatened. You allow yourself to build a new pathway.

## Chapter 5: How Brain Wires Itself

### Five Ways Your Brain Builds Its Wiring

- We are born with many neurons, **experiences determine how our brain is wired**.
- **Myelin** is the coating around neurons that makes neurons very efficient at conducting electricity.
- Repeated experiences build the **neural network** with myelination of the neurons.
- A synapse is a gap between one neuron and the next.
- **Repetition** develops synapses gradually
- Emotion develops synapses instantly.
- Neurons atrophy if they're not used.
- New synapses grow between neurons you use so you connect ideas.
- Receptors make you process feelings, they also grow or atrophy if not used.

### Finding Your Free Will

- Your **limbic brain** provides you with **happy chemicals** to guide you but it is your cortex that decides how to act on the options.
- Following neuronal pathways is easier than creating new ones.
- Before languages, our ancestors learned survival skills with repetition and emotion with the mirror neurons.
- Having numerous neurons is **metabolically expensive**.
- Our **neuronal pathways are built during our childhood**, we can't delete an old circuit but we connect them in new ways.
- Find a healthy habit with few side effects to replace your urge for bad behavior. Repeat long enough to build a new neuronal pathway.

## Chapter 6: New Habits For Each Happy Chemical

### New Dopamine Habits

- **Celebrate your success** daily, no success is too small.
- Take real action that moves you toward your goal.
- Divide the challenge into small chunks.
- Adjust the difficulty, if too easy you will not feel the reward, if too hard you will not even try.

### New Endorphin Habits

- Laugh to release your fear.
- Feel free to cry to release the tension in your muscles (but don't make crying a habit).
- Practice some sports to stimulate your weaker muscles and stretch.

### Building New Oxytocin Circuits

- Build some **social trust** with animals, crowds, and digital friends, there is less risk of disappointment.
- Build this trust gradually step by step.
- Being trusted releases also oxytocin.
- Get a massage.

### Building New Serotonin Circuits

- **Express pride** in what you have done daily.
- When you are in a subordinate position, enjoy not being responsible.
- When you are in the dominant position, **enjoy the respect you get**.
- Don't look people down even if it feels good.
- Learn to feel good even when you are not in control, and do the opposite of what you are used to doing (being a bit chaotic if you like order).

### The Challenges of Establishing a Habit

- We will tend to fall back to our old neuronal pathways because it is easier than building new ones.
- We enjoy music not because it is "good" but because we have a surge of dopamine when we predict what comes next. The sweet spot is between novelty and familiarity.
- **Commit yourself to a few new habits** to successfully build them.

## Chapter 7: Your Action Plan

- Life is a series of **tradeoffs**, there is no one best way to make you feel happy.
- **Short-run vs long-run** (predictions depend on the information filtering built in your old circuit).
- **Known vs unknown** (uncertainty gives you more options than certainty).
- **Individual vs group** (you cannot be in both situations at the same time, learn to enjoy your situation).
- **Free will vs dependency** (find the joy of meeting your own needs, celebrate your freedom to choose instead of putting down those who have power over you).

## Chapter 8: Overcoming Obstacles to Happiness

### Reason #1: "I Can't Lower My Standards"

- Big success doesn't guarantee happiness.
- Giving yourself **high standards** (saving the world) is the excuse to explain why you are not feeling happy.
- As you fail to reach these high standards, your sense of superiority triggers serotonin. Your suffering gives you an excuse for bad habits such as drinking/eating junk food/smoking/raging.

### Reason #2: "I Shouldn't Have to Do This"

- You feel life is **unfair**, it is easy for others, and it is your excuse to indulge yourself.
- Some children learn to expect others to please them, they don't know how to please themselves.
- **Blaming others** and feeling wronged is a vicious cycle that triggers happy chemicals.

### Reason #3: "It's Selfish to Focus on Your Own Happiness"

- Each adult is responsible for his happiness, our brain is selfish.
- If you do good for others and don't get the reward, you will feel bitter.
- **Rescuing other** triggers happy chemicals (serotonin for respect, oxytocin for collaboration, dopamine for accomplishment).

### Reason #4: "I Want to Be Prepared for the Worst"

- Your brain is scanning for old threats because it equates old pains and rewards with survival.
- Start looking for the good and not the threats.

### Reason #5: "I Won't Be Able to Do This"

- It is easy to **imagine failure**.
- Be honest with yourself that you may be disappointed but you still can try.
- Commit for 45 days to break the vicious circle.

#### **Reason #6: “Who Can Be Happy in Such a Flawed Society?”**

- **Blaming society** for our bad feelings distracts us from understanding our internal system.
- Imagining solving the system and bonding stimulate the happy chemicals.

#### **Reason #7: “I Will Be Happy When...”**

- Getting closer to a goal stimulates happy chemicals but each obstacle stimulates unhappy chemicals.
- **Reaching a big goal** provides a surge of happy chemicals for only a while.
- Build the habit of having multiple sources of happiness.

## **Chapter 9: Rely On Tools That Are Always With You**

- **Mirror**: mirror the person who has the habit you want to build.
- **Balance**: develop the happy chemicals you're not already best at.
- **Graft**: build new happy circuits onto old happy roots.
- **Energy**: save your energy for when you are building your new habit.
- **Legacy**: spend more time with your children/grandchildren.
- **Fun**: make the new behaviors fun.
- **Chunk**: divide difficult challenges into smaller parts.
- **Satisfice**: a satisfactory solution may be better than an endless quest for optimal.
- **Plan**: start building circuits now so they're ready when you need them.
- **Visualize**: your neural pathways are building even though they're not visible.